

## ANALYTICAL REPORT

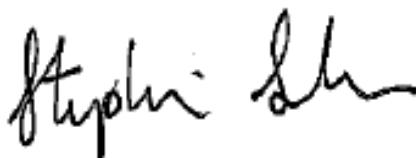
Job Number: 280-61614-2

Job Description: 995|Waimanalo Gulch LF

For:

Waste Management  
Waimanalo Gulch Landfill  
92-460 Farrington Highway  
Kapolei, HI 96707

Attention: Mr. Justin Lottig



Approved for release.  
Stephanie D Sanders  
Project Manager I  
11/7/2014 4:29 PM

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11/07/2014

cc: Mr. Mark Hofferbert  
Ms. Margie Thach

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

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## CASE NARRATIVE

**Client: Waste Management**

**Project: 995|Waimanalo Gulch LF**

**Report Number: 280-61614-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

### **Sample Receiving**

The samples were received on 10/23/2014; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.1° C and 2.2° C.

### **Holding Times**

All holding times were met.

### **Method Blanks**

Total Iron Method 6010B was detected in the Method Blank below the project established reporting limit. No corrective action is taken for any values in Method Blanks that are below the requested reporting limits.

All other Method Blanks were within established control limits.

### **Laboratory Control Samples (LCS)**

The Method 625 laboratory control sample and the laboratory control sample duplicate (LCS/LCSD) for prep batch 249646 recovered outside control limits for the following analyte(s): Hexachlorocyclopentadiene. Hexachlorocyclopentadiene has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

All other Laboratory Control Samples were within established control limits.

### **Matrix Spike (MS) and Matrix Spike Duplicate (MSD)**

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Total Iron Method 6010B because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited recoveries outside control limits for Total Iron Method 6010B, Ammonia Method 350.1, Total Kjeldahl Nitrogen Method 351.2, Total Phosphorus Method 365.1 and Chemical Oxygen Demand Method 410.4. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

The method required MS/MSD could not be performed for Method 625 and Method 1664A due to insufficient sample volume; however, LCS/LCSD pairs were analyzed to demonstrate method precision and accuracy.

All other MS and MSD samples were within established control limits.

### **Organics**

Sample DBO1-E was observed to be orange during the Method 625 extraction procedure.

### **General Chemistry**

Less than 1000mL (normal volume) of the following sample(s) were processed due to the nature of the sample matrix: DBO1-E (280-61614-2). Elevated reporting limits (RLs) are provided in the corresponding analytical batch. The sample was thick, orange/brown

with suspended particulates.

#### **General Comments**

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

For samples requiring analysis at a dilution, the dilution factor has been multiplied by the Method Detection Limit (MDL) for each analyte and evaluated versus the project-specific reporting limit (PSRL). If the obtained value is below the PSRL, then the PSRL is preserved as the reporting limit for the diluted result, otherwise, the obtained value becomes the reporting limit. This is done in order to maintain the PSRL to meet permit requirements at the request of the client and to report the lowest possible RL for each analyte.

The analysis for Biochemical Oxygen Demand (BOD) was performed by TestAmerica Honolulu. Their address and phone number are:  
TestAmerica Honolulu  
1946 Young Street  
Suite 400A  
Honolulu, HI 96826  
Phone: 808.486.5227

The analysis for Hexavalent Chromium was performed at TestAmerica's Irvine facility.  
TestAmerica Irvine  
17461 Derian Avenue  
Suite 100  
Irvine, CA 92614  
Phone: 949.261.1022

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-61614-2

Lab Sample ID Analyte	Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
<b>280-61614-2</b>						
p-Cresol	DBO1-E	0.00072	J	0.010	mg/L	625
Mercury		0.000092	J	0.00020	mg/L	245.1
Field pH		8.46		SU		Field Sampling
Ammonia		0.18		0.10	mg/L	350.1
Nitrogen, Kjeldahl		1.2		0.50	mg/L	351.2
Nitrate Nitrite as N		3.4		0.10	mg/L	353.2
Phosphorus, Total		5.0		0.050	mg/L	365.1
Chemical Oxygen Demand		58		20	mg/L	410.4
Total Suspended Solids		720		11	mg/L	SM 2540D
Nitrogen, Total		4.6		0.10	mg/L	Total Nitrogen
<i>Dissolved</i>						
Chromium, hexavalent		1.1		1.0	ug/L	218.6
<i>Total Recoverable</i>						
Cadmium		0.00078	J	0.0050	mg/L	200.7 Rev 4.4
Iron		62	B	0.10	mg/L	200.7 Rev 4.4
Lead		0.030		0.0090	mg/L	200.7 Rev 4.4
Selenium		0.0064	J	0.015	mg/L	200.7 Rev 4.4
Zinc		0.20		0.020	mg/L	200.7 Rev 4.4

## METHOD SUMMARY

Client: Waste Management

Job Number: 280-61614-2

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Semivolatile Organic Compounds (GC/MS)	TAL DEN	40CFR136A 625	
Liquid-Liquid Extraction	TAL DEN		40CFR136A 625
Metals (ICP)	TAL DEN	EPA 200.7 Rev 4.4	
Preparation, Total Recoverable Metals	TAL DEN		EPA 200.7
Mercury (CVAA)	TAL DEN	EPA 245.1	
Preparation, Mercury	TAL DEN		EPA 245.1
HEM and SGT-HEM	TAL DEN	1664A 1664A	
HEM and SGT-HEM (SPE)	TAL DEN		1664A 1664A
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrogen, Total Kjeldahl	TAL DEN	MCAWW 351.2	
Nitrogen, Total Kjeldahl	TAL DEN		MCAWW 351.2
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Phosphorus, Total	TAL DEN	EPA 365.1	
Phosphorus, Total	TAL DEN		MCAWW 365.2/365.3/365
COD	TAL DEN	MCAWW 410.4	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Nitrogen, Total	TAL DEN	EPA Total Nitrogen	
Field Sampling	TAL DEN	EPA Field Sampling	
General Sub Contract Method	TAL HON	Subcontract	
Chromium, Hexavalent (Ion Chromatography)	TAL IRV	EPA 218.6	
Sample Filtration, Field			FIELD_FLTRD

### Lab References:

TAL DEN = TestAmerica Denver

TAL HON = TestAmerica Honolulu

TAL IRV = TestAmerica Irvine

### Method References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-61614-2

Method	Analyst	Analyst ID
40CFR136A 625	Kiekel, Daniel C	DCK
EPA 200.7 Rev 4.4	Broander, Laura L	LLB
EPA 245.1	Whyte, Whitney A	WAW
EPA Field Sampling	Saraubon, Phakchaya	PS
1664A 1664A	Lawrence, Caitlyn M	CML
MCAWW 350.1	Hoefler, Alexandra F	AFH
MCAWW 351.2	Woolley, Mark -	MW1
MCAWW 353.2	Janssen, Elizabeth L	ELJ
EPA 365.1	Schwemin, Andrew J	AJS
MCAWW 410.4	Shaheen, Scott W	SWS
SM SM 2540D	Woolley, Mark -	MW1
EPA Total Nitrogen	Sullivan, Roxanne K	RKS
EPA 218.6	Pham, Quynh D	QPD

## SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-61614-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-61614-2	DBO1-E	Water	10/20/2014 1253	10/23/2014 0930

# **SAMPLE RESULTS**

**Analytical Data**

Client: Waste Management

Job Number: 280-61614-2

Client Sample ID: **DBO1-E**

Lab Sample ID: 280-61614-2

Date Sampled: 10/20/2014 1253

Client Matrix: Water

Date Received: 10/23/2014 0930

**625 Semivolatile Organic Compounds (GC/MS)**

Analysis Method:	625	Analysis Batch:	280-250496	Instrument ID:	SMS_B2
Prep Method:	625	Prep Batch:	280-249646	Lab File ID:	B2-8055.D
Dilution:	1.0			Initial Weight/Volume:	1051.6 mL
Analysis Date:	10/30/2014 2200			Final Weight/Volume:	1 mL
Prep Date:	10/25/2014 0958			Injection Volume:	0.5 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Alpha-Terpineol	ND		0.0019	0.010
Benzoic acid	ND		0.0095	0.050
p-Cresol	0.00072	J	0.00024	0.010
Pentachlorophenol	ND		0.019	0.060
Phenol	ND		0.0019	0.010

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	83		50 - 120
2-Fluorobiphenyl	65		36 - 120
2-Fluorophenol	64		30 - 120
Nitrobenzene-d5	67		45 - 120
Phenol-d5	68		36 - 120
Terphenyl-d14	55		41 - 120

**Analytical Data**

Client: Waste Management

Job Number: 280-61614-2

Client Sample ID: **DBO1-E**

Lab Sample ID: 280-61614-2

Date Sampled: 10/20/2014 1253

Client Matrix: Water

Date Received: 10/23/2014 0930

**218.6 Chromium, Hexavalent (Ion Chromatography)-Dissolved**

Analysis Method:	218.6	Analysis Batch:	440-214352	Instrument ID:	IC-16
	N/A	Prep Batch:	N/A	Lab File ID:	Info 2_TAIIRV167_Hex C
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	10/27/2014 1904			Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chromium, hexavalent	1.1		0.25	1.0

**Analytical Data**

Client: Waste Management

Job Number: 280-61614-2

Client Sample ID: DBO1-E

Lab Sample ID: 280-61614-2

Date Sampled: 10/20/2014 1253

Client Matrix: Water

Date Received: 10/23/2014 0930

**200.7 Rev 4.4 Metals (ICP)-Total Recoverable**

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	280-250454	Instrument ID:	MT_026
Prep Method:	200.7	Prep Batch:	280-249488	Lab File ID:	26e102914.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/29/2014 2238			Final Weight/Volume:	50 mL
Prep Date:	10/25/2014 0700				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.0044	0.015
Cadmium	0.00078	J	0.00045	0.0050
Lead	0.030		0.0026	0.0090
Selenium	0.0064	J	0.0049	0.015
Zinc	0.20		0.0045	0.020
Silver	ND		0.00093	0.010

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	280-250702	Instrument ID:	MT_026
Prep Method:	200.7	Prep Batch:	280-249488	Lab File ID:	26A103014A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/30/2014 1653			Final Weight/Volume:	50 mL
Prep Date:	10/25/2014 0700				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron	62	B	0.022	0.10

**245.1 Mercury (CVAA)**

Analysis Method:	245.1	Analysis Batch:	280-251094	Instrument ID:	MT_034
Prep Method:	245.1	Prep Batch:	280-250046	Lab File ID:	141031taa.txt
Dilution:	1.0			Initial Weight/Volume:	30 mL
Analysis Date:	10/31/2014 1735			Final Weight/Volume:	30 mL
Prep Date:	10/31/2014 1400				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	0.000092	J	0.000027	0.00020

**Analytical Data**

Client: Waste Management

Job Number: 280-61614-2

**General Chemistry****Client Sample ID:** DBO1-E

Lab Sample ID: 280-61614-2

Date Sampled: 10/20/2014 1253

Client Matrix: Water

Date Received: 10/23/2014 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
HEM	ND		mg/L	16	16	1.0	1664A
	Analysis Batch: 280-250315			Analysis Date: 10/29/2014 1321			
	Prep Batch: 280-250282			Prep Date: 10/29/2014 1009			
Ammonia	0.18		mg/L	0.022	0.10	1.0	350.1
	Analysis Batch: 280-250207			Analysis Date: 10/28/2014 1457			
Nitrogen, Kjeldahl	1.2		mg/L	0.18	0.50	1.0	351.2
	Analysis Batch: 280-250673			Analysis Date: 10/30/2014 2253			
	Prep Batch: 280-250411			Prep Date: 10/29/2014 2134			
Nitrate Nitrite as N	3.4		mg/L	0.019	0.10	1.0	353.2
	Analysis Batch: 280-250205			Analysis Date: 10/28/2014 1457			
Phosphorus, Total	5.0		mg/L	0.050	0.050	10	365.1
	Analysis Batch: 280-250627			Analysis Date: 10/30/2014 1923			
	Prep Batch: 280-250337			Prep Date: 10/29/2014 1507			
Chemical Oxygen Demand	58		mg/L	4.1	20	1.0	410.4
	Analysis Batch: 280-249978			Analysis Date: 10/28/2014 0827			
Total Suspended Solids	720		mg/L	11	11	1.0	SM 2540D
	Analysis Batch: 280-249328			Analysis Date: 10/23/2014 1511			
Nitrogen, Total	4.6		mg/L	0.042	0.10	1.0	Total Nitrogen
	Analysis Batch: 280-251061			Analysis Date: 11/03/2014 1258			

**Analytical Data**

Client: Waste Management

Job Number: 280-61614-2

**Field Service / Mobile Lab****Client Sample ID:** DBO1-E

Lab Sample ID: 280-61614-2

Date Sampled: 10/20/2014 1253

Client Matrix: Water

Date Received: 10/23/2014 0930

Analyte	Result	Qual	Units	Dil	Method	Analysis	Date Analyzed
						Batch	Date Prepared
Field pH	8.46		SU	1.0	Field Sampling	280-249704	10/20/2014 1653

## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-61614-2

Lab Section	Qualifier	Description
GC/MS Semi VOA	*	Recovery or RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals	B	Compound was found in the blank and sample.
	F1	MS and/or MSD Recovery exceeds the control limits
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	F1	MS and/or MSD Recovery exceeds the control limits
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

# **QUALITY CONTROL RESULTS**

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS Semi VOA</b>					
<b>Prep Batch: 280-249646</b>					
LCS 280-249646/2-A	Lab Control Sample	T	Water	625	
LCSD 280-249646/3-A	Lab Control Sample Duplicate	T	Water	625	
MB 280-249646/1-A	Method Blank	T	Water	625	
280-61614-2	DBO1-E	T	Water	625	
<b>Analysis Batch: 280-250496</b>					
LCS 280-249646/2-A	Lab Control Sample	T	Water	625	280-249646
LCSD 280-249646/3-A	Lab Control Sample Duplicate	T	Water	625	280-249646
MB 280-249646/1-A	Method Blank	T	Water	625	280-249646
280-61614-2	DBO1-E	T	Water	625	280-249646

**Report Basis**

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-249488</b>					
LCS 280-249488/2-A	Lab Control Sample	R	Water	200.7	
MB 280-249488/1-A	Method Blank	R	Water	200.7	
280-61610-O-1-B MS	Matrix Spike	R	Water	200.7	
280-61610-O-1-C MSD	Matrix Spike Duplicate	R	Water	200.7	
280-61614-2	DBO1-E	R	Water	200.7	
<b>Prep Batch: 280-250046</b>					
LCS 280-250046/2-A	Lab Control Sample	T	Water	245.1	
MB 280-250046/1-A	Method Blank	T	Water	245.1	
280-61614-2	DBO1-E	T	Water	245.1	
280-61614-2MS	Matrix Spike	T	Water	245.1	
280-61614-2MSD	Matrix Spike Duplicate	T	Water	245.1	
<b>Analysis Batch:280-250454</b>					
LCS 280-249488/2-A	Lab Control Sample	R	Water	200.7 Rev 4.4	280-249488
MB 280-249488/1-A	Method Blank	R	Water	200.7 Rev 4.4	280-249488
280-61610-O-1-B MS	Matrix Spike	R	Water	200.7 Rev 4.4	280-249488
280-61610-O-1-C MSD	Matrix Spike Duplicate	R	Water	200.7 Rev 4.4	280-249488
280-61614-2	DBO1-E	R	Water	200.7 Rev 4.4	280-249488
<b>Analysis Batch:280-250702</b>					
280-61614-2	DBO1-E	R	Water	200.7 Rev 4.4	280-249488
<b>Analysis Batch:280-251094</b>					
LCS 280-250046/2-A	Lab Control Sample	T	Water	245.1	280-250046
MB 280-250046/1-A	Method Blank	T	Water	245.1	280-250046
280-61614-2	DBO1-E	T	Water	245.1	280-250046
280-61614-2MS	Matrix Spike	T	Water	245.1	280-250046
280-61614-2MSD	Matrix Spike Duplicate	T	Water	245.1	280-250046

#### Report Basis

R = Total Recoverable

T = Total

#### Field Service / Mobile Lab

Analysis Batch:280-249704				
280-61614-2	DBO1-E	T	Water	Field Sampling

#### Report Basis

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-249328</b>					
LCS 280-249328/1	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-249328/2	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-249328/3	Method Blank	T	Water	SM 2540D	
280-61614-2	DBO1-E	T	Water	SM 2540D	
280-61625-B-1 DU	Duplicate	T	Water	SM 2540D	
<b>Analysis Batch:280-249978</b>					
LCS 280-249978/3	Lab Control Sample	T	Water	410.4	
LCSD 280-249978/4	Lab Control Sample Duplicate	T	Water	410.4	
MB 280-249978/5	Method Blank	T	Water	410.4	
280-61614-2	DBO1-E	T	Water	410.4	
280-61657-B-19 MS	Matrix Spike	T	Water	410.4	
280-61657-B-19 MSD	Matrix Spike Duplicate	T	Water	410.4	
<b>Analysis Batch:280-250205</b>					
LCS 280-250205/21	Lab Control Sample	T	Water	353.2	
LCSD 280-250205/22	Lab Control Sample Duplicate	T	Water	353.2	
MB 280-250205/23	Method Blank	T	Water	353.2	
280-61612-E-1 MS	Matrix Spike	T	Water	353.2	
280-61612-E-1 MSD	Matrix Spike Duplicate	T	Water	353.2	
280-61614-2	DBO1-E	T	Water	353.2	
<b>Analysis Batch:280-250207</b>					
LCS 280-250207/106	Lab Control Sample	T	Water	350.1	
LCSD 280-250207/107	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-250207/108	Method Blank	T	Water	350.1	
280-61613-D-1 MS	Matrix Spike	T	Water	350.1	
280-61613-D-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-61614-2	DBO1-E	T	Water	350.1	
<b>Prep Batch: 280-250282</b>					
LCS 280-250282/2-A	Lab Control Sample	T	Water	1664A	
LCSD 280-250282/3-A	Lab Control Sample Duplicate	T	Water	1664A	
MB 280-250282/1-A	Method Blank	T	Water	1664A	
280-61614-2	DBO1-E	T	Water	1664A	
<b>Analysis Batch:280-250315</b>					
LCS 280-250282/2-A	Lab Control Sample	T	Water	1664A	280-250282
LCSD 280-250282/3-A	Lab Control Sample Duplicate	T	Water	1664A	280-250282
MB 280-250282/1-A	Method Blank	T	Water	1664A	280-250282
280-61614-2	DBO1-E	T	Water	1664A	280-250282

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Prep Batch: 280-250337</b>					
LCS 280-250337/3-A	Lab Control Sample	T	Water	365.2/365.3/365	
LCSD 280-250337/4-A	Lab Control Sample Duplicate	T	Water	365.2/365.3/365	
MB 280-250337/5-A	Method Blank	T	Water	365.2/365.3/365	
280-61533-E-5-B MS	Matrix Spike	T	Water	365.2/365.3/365	
280-61533-E-5-C MSD	Matrix Spike Duplicate	T	Water	365.2/365.3/365	
280-61614-2	DBO1-E	T	Water	365.2/365.3/365	
<b>Prep Batch: 280-250411</b>					
LCS 280-250411/1-A	Lab Control Sample	T	Water	351.2	
LCSD 280-250411/2-A	Lab Control Sample Duplicate	T	Water	351.2	
MB 280-250411/3-A	Method Blank	T	Water	351.2	
280-61477-A-6-B MS	Matrix Spike	T	Water	351.2	
280-61477-A-6-C MSD	Matrix Spike Duplicate	T	Water	351.2	
280-61614-2	DBO1-E	T	Water	351.2	
<b>Analysis Batch:280-250627</b>					
LCS 280-250337/3-A	Lab Control Sample	T	Water	365.1	280-250337
LCSD 280-250337/4-A	Lab Control Sample Duplicate	T	Water	365.1	280-250337
MB 280-250337/5-A	Method Blank	T	Water	365.1	280-250337
280-61533-E-5-B MS	Matrix Spike	T	Water	365.1	280-250337
280-61533-E-5-C MSD	Matrix Spike Duplicate	T	Water	365.1	280-250337
280-61614-2	DBO1-E	T	Water	365.1	280-250337
<b>Analysis Batch:280-250673</b>					
LCS 280-250411/1-A	Lab Control Sample	T	Water	351.2	280-250411
LCSD 280-250411/2-A	Lab Control Sample Duplicate	T	Water	351.2	280-250411
MB 280-250411/3-A	Method Blank	T	Water	351.2	280-250411
280-61477-A-6-B MS	Matrix Spike	T	Water	351.2	280-250411
280-61477-A-6-C MSD	Matrix Spike Duplicate	T	Water	351.2	280-250411
280-61614-2	DBO1-E	T	Water	351.2	280-250411
<b>Analysis Batch:280-251061</b>					
MB 280-251061/1	Method Blank	T	Water	Total Nitrogen	
280-61614-2	DBO1-E	T	Water	Total Nitrogen	

#### Report Basis

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:440-214352</b>					
LCS 440-214352/2	Lab Control Sample	T	Water	218.6	
MB 440-214352/3	Method Blank	T	Water	218.6	
280-61614-2	DBO1-E	D	Water	218.6	
280-61614-2MS	Matrix Spike	D	Water	218.6	
280-61614-2MSD	Matrix Spike Duplicate	D	Water	218.6	

**Report Basis**

D = Dissolved

T = Total

**Quality Control Results**

Client: Waste Management

Job Number: 280-61614-2

**Surrogate Recovery Report****625 Semivolatile Organic Compounds (GC/MS)****Client Matrix: Water**

Lab Sample ID	Client Sample ID	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec
280-61614-2	DBO1-E	83	65	64	67	68	55
MB 280-249646/1-A		64	62	66	66	68	92
LCS 280-249646/2-A		87	72	70	72	72	88
LCSD 280-249646/3-A		92	78	73	78	77	93

Surrogate	Acceptance Limits
TBP = 2,4,6-Tribromophenol	50-120
FBP = 2-Fluorobiphenyl	36-120
2FP = 2-Fluorophenol	30-120
NBZ = Nitrobenzene-d5	45-120
PHL = Phenol-d5	36-120
TPH = Terphenyl-d14	41-120

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Method Blank - Batch: 280-249646****Method: 625****Preparation: 625**

Lab Sample ID:	MB 280-249646/1-A	Analysis Batch:	280-250496	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-249646	Lab File ID:	B2-8033.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/30/2014 1056	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	10/25/2014 0958			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Alpha-Terpineol	ND		0.0020	0.010
Benzoic acid	ND		0.010	0.050
p-Cresol	ND		0.00025	0.010
Pentachlorophenol	ND		0.020	0.060
Phenol	ND		0.0020	0.010
Surrogate	% Rec		Acceptance Limits	
2,4,6-Tribromophenol	64		50 - 120	
2-Fluorobiphenyl	62		36 - 120	
2-Fluorophenol	66		30 - 120	
Nitrobenzene-d5	66		45 - 120	
Phenol-d5	68		36 - 120	
Terphenyl-d14	92		41 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-249646**

**Method: 625  
Preparation: 625**

LCS Lab Sample ID:	LCS 280-249646/2-A	Analysis Batch:	280-250496	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-249646	Lab File ID:	B2-8034.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/30/2014 1126	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	10/25/2014 0958			Injection Volume:	0.5 uL
Leach Date:	N/A				

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LCSD Lab Sample ID:	LCSD 280-249646/3-A	Analysis Batch:	280-250496	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-249646	Lab File ID:	B2-8035.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/30/2014 1157	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	10/25/2014 0958			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec.						
	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,2,4-Trichlorobenzene	56	65	44 - 120	16	35		
1,2-Dichlorobenzene	50	64	32 - 120	23	42		
1,3-Dichlorobenzene	47	60	23 - 120	24	47		
1,4-Dichlorobenzene	49	62	24 - 120	24	49		
2,2'-Oxybis(1-chloropropane)	69	75	37 - 120	9	30		
2,4,6-Trichlorophenol	77	88	51 - 120	12	30		
2,4-Dichlorophenol	72	79	46 - 120	9	30		
2,4-Dimethylphenol	47	56	44 - 119	17	35		
2,4-Dinitrophenol	80	88	20 - 121	9	61		
2,4-Dinitrotoluene	87	94	57 - 120	8	35		
2,6-Dinitrotoluene	83	94	56 - 120	12	30		
2-Chloronaphthalene	69	78	60 - 118	13	30		
2-Chlorophenol	69	75	34 - 120	9	30		
2-Methylphenol	69	74	38 - 120	8	35		
2-Nitrophenol	71	78	47 - 120	9	30		
3,3'-Dichlorobenzidine	50	42	18 - 120	18	50	J	J
4,6-Dinitro-2-methylphenol	84	91	40 - 120	9	55		
4-Bromophenyl phenyl ether	82	88	53 - 120	7	34		
4-Chloro-3-methylphenol	79	88	57 - 120	10	30		
4-Chlorophenyl phenyl ether	77	88	51 - 120	14	30		
4-Nitrophenol	87	92	53 - 120	6	42		
Acenaphthene	74	84	47 - 120	13	30		
Acenaphthylene	72	82	33 - 120	13	30		
Anthracene	81	86	52 - 120	7	30		
Benzidine	25	25	10 - 218	2	50		
Benzo[a]anthracene	83	91	54 - 120	9	30		
Benzo[a]pyrene	82	87	39 - 120	7	73		
Benzo[b]fluoranthene	84	90	51 - 120	7	90		
Benzo[g,h,i]perylene	84	89	48 - 120	6	64		
Benzo[k]fluoranthene	87	94	49 - 120	8	50		
Bis(2-chloroethoxy)methane	70	78	50 - 120	10	30		
Bis(2-chloroethyl)ether	68	74	35 - 120	9	30		
Bis(2-ethylhexyl) phthalate	85	94	56 - 120	9	30		
Butyl benzyl phthalate	86	94	53 - 120	9	30		
Chrysene	82	91	51 - 120	10	30		
Dibenz(a,h)anthracene	84	92	45 - 120	8	78		

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-249646**

**Method: 625  
Preparation: 625**

LCS Lab Sample ID:	LCS 280-249646/2-A	Analysis Batch:	280-250496	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-249646	Lab File ID:	B2-8034.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/30/2014 1126	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	10/25/2014 0958			Injection Volume:	0.5 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-249646/3-A	Analysis Batch:	280-250496	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-249646	Lab File ID:	B2-8035.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/30/2014 1157	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	10/25/2014 0958			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Diethyl phthalate	85	93	59 - 114	9	30	
Dimethyl phthalate	83	91	58 - 112	9	30	
Di-n-butyl phthalate	86	93	57 - 118	8	30	
Di-n-octyl phthalate	87	97	56 - 120	10	30	
Fluoranthene	84	90	58 - 120	7	30	
Fluorene	80	88	59 - 120	10	30	
Hexachlorobenzene	79	88	53 - 120	11	30	
Hexachlorobutadiene	49	60	27 - 116	20	41	
Hexachlorocyclopentadiene	6	8	10 - 120	36	82	J *
Hexachloroethane	43	58	40 - 113	30	52	
Indeno[1,2,3-cd]pyrene	82	89	50 - 120	8	73	
Isophorone	72	80	50 - 120	11	30	
Naphthalene	64	72	37 - 120	13	30	
n-Decane	36	52	28 - 120	37	61	
Nitrobenzene	70	78	46 - 120	11	30	
N-Nitrosodimethylamine	66	71	37 - 120	8	30	
N-Nitrosodi-n-propylamine	71	80	50 - 120	11	30	
N-Nitrosodiphenylamine	79	85	46 - 203	8	50	
p-Cresol	69	77	42 - 120	12	39	
Pentachlorophenol	80	88	46 - 120	10	30	
Phenanthrene	82	88	54 - 120	7	30	
Phenol	70	75	37 - 112	7	30	
Pyrene	84	92	55 - 115	9	30	
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits	
2,4,6-Tribromophenol	87		92		50 - 120	
2-Fluorobiphenyl	72		78		36 - 120	
2-Fluorophenol	70		73		30 - 120	
Nitrobenzene-d5	72		78		45 - 120	
Phenol-d5	72		77		36 - 120	
Terphenyl-d14	88		93		41 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-249646**

**Method: 625  
Preparation: 625**

LCS Lab Sample ID:	LCS 280-249646/2-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-249646/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/30/2014 1126			Analysis Date:	10/30/2014 1157
Prep Date:	10/25/2014 0958			Prep Date:	10/25/2014 0958
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual		
1,2,4-Trichlorobenzene	0.0800	0.0800	0.0446	0.0524		
1,2-Dichlorobenzene	0.0800	0.0800	0.0403	0.0509		
1,3-Dichlorobenzene	0.0800	0.0800	0.0375	0.0476		
1,4-Dichlorobenzene	0.0800	0.0800	0.0388	0.0493		
2,2'-Oxybis(1-chloropropane)	0.0800	0.0800	0.0552	0.0604		
2,4,6-Trichlorophenol	0.0800	0.0800	0.0620	0.0700		
2,4-Dichlorophenol	0.0800	0.0800	0.0577	0.0631		
2,4-Dimethylphenol	0.0800	0.0800	0.0376	0.0444		
2,4-Dinitrophenol	0.160	0.160	0.128	0.140		
2,4-Dinitrotoluene	0.0800	0.0800	0.0694	0.0754		
2,6-Dinitrotoluene	0.0800	0.0800	0.0666	0.0753		
2-Chloronaphthalene	0.0800	0.0800	0.0552	0.0627		
2-Chlorophenol	0.0800	0.0800	0.0549	0.0603		
2-Methylphenol	0.0800	0.0800	0.0548	0.0596		
2-Nitrophenol	0.0800	0.0800	0.0568	0.0624		
3,3'-Dichlorobenzidine	0.0800	0.0800	0.0401 J	0.0337 J		
4,6-Dinitro-2-methylphenol	0.160	0.160	0.134	0.146		
4-Bromophenyl phenyl ether	0.0800	0.0800	0.0653	0.0701		
4-Chloro-3-methylphenol	0.0800	0.0800	0.0635	0.0700		
4-Chlorophenyl phenyl ether	0.0800	0.0800	0.0615	0.0705		
4-Nitrophenol	0.160	0.160	0.138	0.147		
Acenaphthene	0.0800	0.0800	0.0592	0.0673		
Acenaphthylene	0.0800	0.0800	0.0579	0.0660		
Anthracene	0.0800	0.0800	0.0644	0.0688		
Benzidine	0.0800	0.0800	ND	ND		
Benzo[a]anthracene	0.0800	0.0800	0.0662	0.0724		
Benzo[a]pyrene	0.0800	0.0800	0.0654	0.0699		
Benzo[b]fluoranthene	0.0800	0.0800	0.0669	0.0718		
Benzo[g,h,i]perylene	0.0800	0.0800	0.0675	0.0714		
Benzo[k]fluoranthene	0.0800	0.0800	0.0694	0.0749		
Bis(2-chloroethoxy)methane	0.0800	0.0800	0.0562	0.0622		
Bis(2-chloroethyl)ether	0.0800	0.0800	0.0543	0.0594		
Bis(2-ethylhexyl) phthalate	0.0800	0.0800	0.0684	0.0749		
Butyl benzyl phthalate	0.0800	0.0800	0.0685	0.0749		
Chrysene	0.0800	0.0800	0.0658	0.0725		
Dibenz(a,h)anthracene	0.0800	0.0800	0.0676	0.0733		
Diethyl phthalate	0.0800	0.0800	0.0679	0.0745		
Dimethyl phthalate	0.0800	0.0800	0.0668	0.0731		
Di-n-butyl phthalate	0.0800	0.0800	0.0689	0.0744		

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-249646

**Method: 625**  
**Preparation: 625**

LCS Lab Sample ID:	LCS 280-249646/2-A	Units:	mg/L	LCS Lab Sample ID:	LCSD 280-249646/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/30/2014 1126			Analysis Date:	10/30/2014 1157
Prep Date:	10/25/2014 0958			Prep Date:	10/25/2014 0958
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual	
Di-n-octyl phthalate	0.0800	0.0800	0.0699	0.0775	
Fluoranthene	0.0800	0.0800	0.0671	0.0723	
Fluorene	0.0800	0.0800	0.0640	0.0704	
Hexachlorobenzene	0.0800	0.0800	0.0635	0.0707	
Hexachlorobutadiene	0.0800	0.0800	0.0393	0.0479	
Hexachlorocyclopentadiene	0.0800	0.0800	0.00456 J *	0.00658 J *	
Hexachloroethane	0.0800	0.0800	0.0341	0.0461	
Indeno[1,2,3-cd]pyrene	0.0800	0.0800	0.0654	0.0712	
Isophorone	0.0800	0.0800	0.0573	0.0638	
Naphthalene	0.0800	0.0800	0.0510	0.0579	
n-Decane	0.0800	0.0800	0.0286	0.0415	
Nitrobenzene	0.0800	0.0800	0.0561	0.0624	
N-Nitrosodimethylamine	0.0800	0.0800	0.0525	0.0567	
N-Nitrosodi-n-propylamine	0.0800	0.0800	0.0569	0.0638	
N-Nitrosodiphenylamine	0.0800	0.0800	0.0630	0.0682	
p-Cresol	0.0800	0.0800	0.0550	0.0619	
Pentachlorophenol	0.160	0.160	0.128	0.141	
Phenanthrene	0.0800	0.0800	0.0658	0.0704	
Phenol	0.0800	0.0800	0.0563	0.0603	
Pyrene	0.0800	0.0800	0.0670	0.0737	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Method Blank - Batch: 440-214352****Method: 218.6****Preparation: N/A**

Lab Sample ID:	MB 440-214352/3	Analysis Batch:	440-214352	Instrument ID:	IC-16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Info 2_TAIIRV167_Hex Ch
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/27/2014 0735	Units:	ug/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chromium, hexavalent	ND		0.25	1.0

**Lab Control Sample - Batch: 440-214352****Method: 218.6****Preparation: N/A**

Lab Sample ID:	LCS 440-214352/2	Analysis Batch:	440-214352	Instrument ID:	IC-16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Info 2_TAIIRV167_Hex Ch
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/27/2014 0722	Units:	ug/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chromium, hexavalent	50.0	49.9	100	90 - 110	

**Method Reporting Limit Check - Batch: 440-214352****Method: 218.6****Preparation: N/A**

Lab Sample ID:	MRL 440-214352/4	Analysis Batch:	440-214352	Instrument ID:	IC-16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Info 2_TAIIRV167_Hex Ch
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/27/2014 0749	Units:	ug/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chromium, hexavalent	1.00	1.02	102	50 - 150	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 440-214352

**Method: 218.6**  
**Preparation: N/A**

MS Lab Sample ID:	280-61614-2	Analysis Batch:	440-214352	Instrument ID:	IC-16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Info 2_TAIIRV167_Hex Ch
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/27/2014 1918			Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-61614-2	Analysis Batch:	440-214352	Instrument ID:	IC-16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Info 2_TAIIRV167_Hex Ch
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/27/2014 1932			Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chromium, hexavalent	101	102	90 - 110	0	10		

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 440-214352

**Method: 218.6**  
**Preparation: N/A**

MS Lab Sample ID:	280-61614-2	Units:	ug/L	MSD Lab Sample ID:	280-61614-2
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/27/2014 1918			Analysis Date:	10/27/2014 1932
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
	Result/Qual				
Chromium, hexavalent	1.1	50.0	50.0	51.8	52.0

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Method Blank - Batch: 280-249488****Method: 200.7 Rev 4.4****Preparation: 200.7****Total Recoverable**

Lab Sample ID:	MB 280-249488/1-A	Analysis Batch:	280-250454	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-249488	Lab File ID:	26e102914.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/29/2014 2158	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	10/25/2014 0700				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.0044	0.015
Cadmium	ND		0.00045	0.0050
Iron	0.0312	J	0.022	0.10
Lead	ND		0.0026	0.0090
Selenium	ND		0.0049	0.015
Zinc	ND		0.0045	0.020
Silver	ND		0.00093	0.010

**Lab Control Sample - Batch: 280-249488****Method: 200.7 Rev 4.4****Preparation: 200.7****Total Recoverable**

Lab Sample ID:	LCS 280-249488/2-A	Analysis Batch:	280-250454	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-249488	Lab File ID:	26e102914.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/29/2014 2201	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	10/25/2014 0700				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1.00	0.993	99	88 - 110	
Cadmium	0.100	0.0970	97	88 - 111	
Iron	1.00	1.05	105	89 - 115	
Lead	0.500	0.519	104	89 - 110	
Selenium	2.00	2.11	106	85 - 112	
Zinc	0.500	0.493	99	85 - 111	
Silver	0.0500	0.0557	111	85 - 115	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-249488**

**Method: 200.7 Rev 4.4**

**Preparation: 200.7**

**Total Recoverable**

MS Lab Sample ID:	280-61610-O-1-B MS	Analysis Batch:	280-250454	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-249488	Lab File ID:	26e102914.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/29/2014 2212			Final Weight/Volume:	50 mL
Prep Date:	10/25/2014 0700				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61610-O-1-C MSD	Analysis Batch:	280-250454	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-249488	Lab File ID:	26e102914.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/29/2014 2214			Final Weight/Volume:	50 mL
Prep Date:	10/25/2014 0700				
Leach Date:	N/A				

Analyte	% Rec.						
	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	102	106	88 - 110	3	20		
Cadmium	98	102	88 - 111	4	20		
Iron	99	157	89 - 115	2	20	4	4
Lead	98	101	89 - 110	3	20		
Selenium	107	111	85 - 112	4	20		
Zinc	94	98	85 - 111	3	20		
Silver	113	119	85 - 115	5	20		F1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-249488**

**Method: 200.7 Rev 4.4**

**Preparation: 200.7**

**Total Recoverable**

MS Lab Sample ID:	280-61610-O-1-B MS	Units:	mg/L	MSD Lab Sample ID:	280-61610-O-1-C MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/29/2014 2212			Analysis Date:	10/29/2014 2214
Prep Date:	10/25/2014 0700			Prep Date:	10/25/2014 0700
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample		MS Spike	MSD Spike	MS	MSD
	Result/Qual	Amount	Amount	Amount	Result/Qual	Result/Qual
Arsenic	0.049	1.00	1.00	1.07	1.11	
Cadmium	ND	0.100	0.100	0.0981	0.102	
Iron	25	1.00	1.00	25.9	4	26.5
Lead	ND	0.500	0.500	0.490	0.506	
Selenium	0.0088	J	2.00	2.00	2.15	2.24
Zinc	0.033	0.500	0.500	0.504	0.521	
Silver	ND	0.0500	0.0500	0.0566	0.0595	F1

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Method Blank - Batch: 280-250046**
**Method: 245.1**
**Preparation: 245.1**

Lab Sample ID:	MB 280-250046/1-A	Analysis Batch:	280-251094	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-250046	Lab File ID:	141031taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	10/31/2014 1726	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	10/31/2014 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	ND		0.000027	0.00020

**Lab Control Sample - Batch: 280-250046**
**Method: 245.1**
**Preparation: 245.1**

Lab Sample ID:	LCS 280-250046/2-A	Analysis Batch:	280-251094	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-250046	Lab File ID:	141031taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	10/31/2014 1728	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	10/31/2014 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00500	0.00491	98	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-250046**
**Method: 245.1**
**Preparation: 245.1**

MS Lab Sample ID:	280-61614-2	Analysis Batch:	280-251094	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-250046	Lab File ID:	141031taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	10/31/2014 1737			Final Weight/Volume:	30 mL
Prep Date:	10/31/2014 1400				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61614-2	Analysis Batch:	280-251094	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-250046	Lab File ID:	141031taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	10/31/2014 1740			Final Weight/Volume:	30 mL
Prep Date:	10/31/2014 1400				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Mercury	97	93	80 - 120	4	10		

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-250046**

**Method: 245.1  
Preparation: 245.1**

MS Lab Sample ID:	280-61614-2	Units:	mg/L	MSD Lab Sample ID:	280-61614-2
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/31/2014 1737			Analysis Date:	10/31/2014 1740
Prep Date:	10/31/2014 1400			Prep Date:	10/31/2014 1400
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Mercury	0.000092 J	0.00500	0.00500	0.00493	0.00475

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Method Blank - Batch: 280-250282

**Method: 1664A**

**Preparation: 1664A**

Lab Sample ID:	MB 280-250282/1-A	Analysis Batch:	280-250315	Instrument ID:	WC_Cond_Orion
Client Matrix:	Water	Prep Batch:	280-250282	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/29/2014 1321	Units:	mg/L	Final Weight/Volume:	1000 mL
Prep Date:	10/29/2014 1009				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
HEM	ND		1.6	5.0

### Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-250282

**Method: 1664A**

**Preparation: 1664A**

LCS Lab Sample ID:	LCS 280-250282/2-A	Analysis Batch:	280-250315	Instrument ID:	WC_Cond_Orion
Client Matrix:	Water	Prep Batch:	280-250282	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/29/2014 1321	Units:	mg/L	Final Weight/Volume:	1000 mL
Prep Date:	10/29/2014 1009				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-250282/3-A	Analysis Batch:	280-250315	Instrument ID:	WC_Cond_Orion
Client Matrix:	Water	Prep Batch:	280-250282	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	10/29/2014 1321	Units:	mg/L	Final Weight/Volume:	1000 mL
Prep Date:	10/29/2014 1009				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
HEM	90	87	78 - 114	3	18	

### Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-250282

**Method: 1664A**

**Preparation: 1664A**

LCS Lab Sample ID:	LCS 280-250282/2-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-250282/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/29/2014 1321			Analysis Date:	10/29/2014 1321
Prep Date:	10/29/2014 1009			Prep Date:	10/29/2014 1009
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
HEM	40.0	40.0	35.9	34.8

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Method Blank - Batch: 280-250207

**Method: 350.1**

**Preparation: N/A**

Lab Sample ID:	MB 280-250207/108	Analysis Batch:	280-250207	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/28/2014 1449	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Ammonia	ND		0.022	0.10

### Laboratory Control Sample/ Laboratory Control Sample Duplicate Recovery Report - Batch: 280-250207

**Method: 350.1**

**Preparation: N/A**

LCS Lab Sample ID:	LCS 280-250207/106	Analysis Batch:	280-250207	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 1445	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-250207/107	Analysis Batch:	280-250207	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 1447	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Ammonia	97	98	90 - 110	0	10	

### Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-250207

**Method: 350.1**

**Preparation: N/A**

LCS Lab Sample ID:	LCS 280-250207/106	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-250207/107
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/28/2014 1445			Analysis Date:	10/28/2014 1447
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia	2.50	2.50	2.43	2.44

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-250207****Method: 350.1  
Preparation: N/A**

MS Lab Sample ID:	280-61613-D-1 MS	Analysis Batch:	280-250207	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/28/2014 1451			Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61613-D-1 MSD	Analysis Batch:	280-250207	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	10/28/2014 1453			Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	84	85	90 - 110	0	10	F1	F1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-250207****Method: 350.1  
Preparation: N/A**

MS Lab Sample ID:	280-61613-D-1 MS	Units:	mg/L	MSD Lab Sample ID:	280-61613-D-1 MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/28/2014 1451			Analysis Date:	10/28/2014 1453
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike	MSD Spike	MS Result/Qual	MSD	MS Result/Qual	
		Amount	Amount				
Ammonia	0.26	1.00	1.00	1.10	F1	1.11	F1

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Method Blank - Batch: 280-250411****Method: 351.2****Preparation: 351.2**

Lab Sample ID:	MB 280-250411/3-A	Analysis Batch:	280-250673	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-250411	Lab File ID:	103014TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	10/30/2014 2207	Units:	mg/L	Final Weight/Volume:	25 mL
Prep Date:	10/29/2014 2134				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrogen, Kjeldahl	ND		0.18	0.50

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-250411****Method: 351.2****Preparation: 351.2**

LCS Lab Sample ID:	LCS 280-250411/1-A	Analysis Batch:	280-250673	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-250411	Lab File ID:	103014TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	10/30/2014 2204	Units:	mg/L	Final Weight/Volume:	25 mL
Prep Date:	10/29/2014 2134				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-250411/2-A	Analysis Batch:	280-250673	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-250411	Lab File ID:	103014TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	10/30/2014 2206	Units:	mg/L	Final Weight/Volume:	25 mL
Prep Date:	10/29/2014 2134				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Nitrogen, Kjeldahl	92	93	90 - 110	2	25	

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-250411****Method: 351.2****Preparation: 351.2**

LCS Lab Sample ID:	LCS 280-250411/1-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-250411/2-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/30/2014 2204			Analysis Date:	10/30/2014 2206
Prep Date:	10/29/2014 2134			Prep Date:	10/29/2014 2134
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Nitrogen, Kjeldahl	6.00	6.00	5.50	5.61

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### **Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-250411**

**Method: 351.2  
Preparation: 351.2**

MS Lab Sample ID:	280-61477-A-6-B MS	Analysis Batch:	280-250673	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-250411	Lab File ID:	103014TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	10/30/2014 2312			Final Weight/Volume:	25 mL
Prep Date:	10/29/2014 2134				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61477-A-6-C MSD	Analysis Batch:	280-250673	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-250411	Lab File ID:	103014TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	10/30/2014 2313			Final Weight/Volume:	25 mL
Prep Date:	10/29/2014 2134				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrogen, Kjeldahl	182	164	90 - 110	6	25	F1	F1

### **Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-250411**

**Method: 351.2  
Preparation: 351.2**

MS Lab Sample ID:	280-61477-A-6-B MS	Units:	mg/L	MSD Lab Sample ID:	280-61477-A-6-C MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/30/2014 2312			Analysis Date:	10/30/2014 2313
Prep Date:	10/29/2014 2134			Prep Date:	10/29/2014 2134
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike	MSD Spike	MS Result/Qual	MSD	MSD Result/Qual	
		Amount	Amount				
Nitrogen, Kjeldahl	3.8	3.00	3.00	9.23	F1	8.68	F1

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### **Method Blank - Batch: 280-250205**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID:	MB 280-250205/23	Analysis Batch:	280-250205	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/28/2014 1425	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate Nitrite as N	ND		0.019	0.10

### **Method Reporting Limit Check - Batch: 280-250205**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID:	MRL 280-250205/18	Analysis Batch:	280-250205	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 1406	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	0.100	0.0953	95	50 - 150	J

### **Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-250205**

**Method: 353.2**  
**Preparation: N/A**

LCS Lab Sample ID:	LCS 280-250205/21	Analysis Batch:	280-250205	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 1421	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-250205/22	Analysis Batch:	280-250205	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 1423	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Nitrate Nitrite as N	103	102	90 - 110	1	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-250205**

**Method: 353.2  
Preparation: N/A**

LCS Lab Sample ID:	LCS 280-250205/21	Units:	mg/L	LCS Lab Sample ID:	LCSD 280-250205/22
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/28/2014 1421			Analysis Date:	10/28/2014 1423
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Nitrate Nitrite as N	5.00	5.00	5.14	5.11

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-250205**

**Method: 353.2  
Preparation: N/A**

MS Lab Sample ID:	280-61612-E-1 MS	Analysis Batch:	280-250205	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/28/2014 1429			Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61612-E-1 MSD	Analysis Batch:	280-250205	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\102814.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/28/2014 1431			Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	103	103	90 - 110	1	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-250205**

**Method: 353.2  
Preparation: N/A**

MS Lab Sample ID:	280-61612-E-1 MS	Units:	mg/L	MSD Lab Sample ID:	280-61612-E-1 MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/28/2014 1429			Analysis Date:	10/28/2014 1431
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
	Result	Qual				
Nitrate Nitrite as N	0.026	J	4.00	4.00	4.15	4.13

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Method Blank - Batch: 280-250337

**Method: 365.1**

**Preparation: 365.2/365.3/365**

Lab Sample ID:	MB 280-250337/5-A	Analysis Batch:	280-250627	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	280-250337	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/30/2014 1852	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	10/29/2014 1507				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Phosphorus, Total	ND		0.0050	0.050

### Lab Control Sample/

### Lab Control Sample Duplicate Recovery Report - Batch: 280-250337

**Method: 365.1**

**Preparation: 365.2/365.3/365**

LCS Lab Sample ID:	LCS 280-250337/3-A	Analysis Batch:	280-250627	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	280-250337	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/30/2014 1852	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	10/29/2014 1507				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-250337/4-A	Analysis Batch:	280-250627	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	280-250337	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/30/2014 1852	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	10/29/2014 1507				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Phosphorus, Total	103	100	90 - 110	3	10	

### Laboratory Control/

### Laboratory Duplicate Data Report - Batch: 280-250337

**Method: 365.1**

**Preparation: 365.2/365.3/365**

LCS Lab Sample ID:	LCS 280-250337/3-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-250337/4-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/30/2014 1852			Analysis Date:	10/30/2014 1852
Prep Date:	10/29/2014 1507			Prep Date:	10/29/2014 1507
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Phosphorus, Total	0.500	0.500	0.515	0.501

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-250337

**Method: 365.1**  
**Preparation: 365.2/365.3/365**

MS Lab Sample ID:	280-61533-E-5-B MS	Analysis Batch:	280-250627	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	280-250337	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/30/2014 1852			Final Weight/Volume:	50 mL
Prep Date:	10/29/2014 1507				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61533-E-5-C MSD	Analysis Batch:	280-250627	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	280-250337	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/30/2014 1852			Final Weight/Volume:	50 mL
Prep Date:	10/29/2014 1507				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Phosphorus, Total	112	112	90 - 110	0	10	F1	F1

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-250337

**Method: 365.1**  
**Preparation: 365.2/365.3/365**

MS Lab Sample ID:	280-61533-E-5-B MS	Units:	mg/L	MSD Lab Sample ID:	280-61533-E-5-C MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/30/2014 1852			Analysis Date:	10/30/2014 1852
Prep Date:	10/29/2014 1507			Prep Date:	10/29/2014 1507
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike	MSD Spike	MS Result/Qual	MSD	MSD Result/Qual	
		Amount	Amount				
Phosphorus, Total	ND	0.500	0.500	0.561	F1	0.559	F1

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Method Blank - Batch: 280-249978

**Method: 410.4**  
**Preparation: N/A**

Lab Sample ID:	MB 280-249978/5	Analysis Batch:	280-249978	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	2 mL
Analysis Date:	10/28/2014 0827	Units:	mg/L	Final Weight/Volume:	2 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chemical Oxygen Demand	ND		4.1	20

### Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-249978

**Method: 410.4**  
**Preparation: N/A**

LCS Lab Sample ID:	LCS 280-249978/3	Analysis Batch:	280-249978	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 0827	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-249978/4	Analysis Batch:	280-249978	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 0827	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Chemical Oxygen Demand	104	102	90 - 110	2	11	

### Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-249978

**Method: 410.4**  
**Preparation: N/A**

LCS Lab Sample ID:	LCS 280-249978/3	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-249978/4
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/28/2014 0827			Analysis Date:	10/28/2014 0827
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chemical Oxygen Demand	100	100	104	102

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-249978

**Method: 410.4**  
**Preparation: N/A**

MS Lab Sample ID:	280-61657-B-19 MS	Analysis Batch:	280-249978	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 0827			Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-61657-B-19 MSD	Analysis Batch:	280-249978	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/28/2014 0827			Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chemical Oxygen Demand	105	93	90 - 110	12	11		F2

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-249978

**Method: 410.4**  
**Preparation: N/A**

MS Lab Sample ID:	280-61657-B-19 MS	Units:	mg/L	MSD Lab Sample ID:	280-61657-B-19 MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/28/2014 0827			Analysis Date:	10/28/2014 0827
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
	Result/Qual				
Chemical Oxygen Demand	ND	50.0	50.0	52.6	46.4
					F2

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Method Blank - Batch: 280-249328

#### Method: SM 2540D

Preparation: N/A

Lab Sample ID:	MB 280-249328/3	Analysis Batch:	280-249328	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	10/23/2014 1511	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Total Suspended Solids	ND		1.1	4.0

### Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-249328

#### Method: SM 2540D

Preparation: N/A

LCS Lab Sample ID:	LCS 280-249328/1	Analysis Batch:	280-249328	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/23/2014 1511	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-249328/2	Analysis Batch:	280-249328	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	10/23/2014 1511	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	LCS	LCSD	% Rec.	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Total Suspended Solids	92	89	86 - 114	86 - 114	3	20		

### Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-249328

#### Method: SM 2540D

Preparation: N/A

LCS Lab Sample ID:	LCS 280-249328/1	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-249328/2
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	10/23/2014 1511			Analysis Date:	10/23/2014 1511
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Total Suspended Solids	100	100	92.0	89.0

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

**Duplicate - Batch: 280-249328**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID:	280-61625-B-1 DU	Analysis Batch:	280-249328	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	10/23/2014 1511	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	6.0	5.60	7	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

### Method Blank - Batch: 280-251061

### Method: Total Nitrogen

Preparation: N/A

Lab Sample ID:	MB 280-251061/1	Analysis Batch:	280-251061	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	11/03/2014 1258	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrogen, Total	ND		0.042	0.10

# Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

## Laboratory Chronicle

Lab ID: 280-61614-2

Client ID: DBO1-E

Sample Date/Time: 10/20/2014 12:53 Received Date/Time: 10/23/2014 09:30

Method	Bottle ID	Run	Analysis		Date Prepared / Analyzed		Dil	Lab	Analyst
			Batch	Prep Batch					
P:625	280-61614-A-2-A	280-250496	280-249646	10/25/2014 09:58	1	TAL DEN	JRK		
A:625	280-61614-A-2-A	280-250496	280-249646	10/30/2014 22:00	1	TAL DEN	DCK		
A:218.6	280-61614-J-2	440-214352		10/27/2014 19:04	1	TAL IRV	QPD		
P:200.7	280-61614-I-2-A	280-250454	280-249488	10/25/2014 07:00	1	TAL DEN	CGG		
A:200.7 Rev 4.4	280-61614-I-2-A	280-250454	280-249488	10/29/2014 22:38	1	TAL DEN	LLB		
P:200.7	280-61614-I-2-A	280-250702	280-249488	10/25/2014 07:00	1	TAL DEN	CGG		
A:200.7 Rev 4.4	280-61614-I-2-A	280-250702	280-249488	10/30/2014 16:53	1	TAL DEN	LLB		
P:245.1	280-61614-I-2-B	280-251094	280-250046	10/31/2014 14:00	1	TAL DEN	WAW		
A:245.1	280-61614-I-2-B	280-251094	280-250046	10/31/2014 17:35	1	TAL DEN	WAW		
P:1664A	280-61614-C-2-A	280-250315	280-250282	10/29/2014 10:09	1	TAL DEN	CML		
A:1664A	280-61614-C-2-A	280-250315	280-250282	10/29/2014 13:21	1	TAL DEN	CML		
A:350.1	280-61614-G-2	280-250207		10/28/2014 14:57	1	TAL DEN	AFH		
P:351.2	280-61614-G-2-B	280-250673	280-250411	10/29/2014 21:34	1	TAL DEN	MW1		
A:351.2	280-61614-G-2-B	280-250673	280-250411	10/30/2014 22:53	1	TAL DEN	MW1		
A:353.2	280-61614-H-2	280-250205		10/28/2014 14:57	1	TAL DEN	ELJ		
P:365.2/365.3/365	280-61614-G-2-A	280-250627	280-250337	10/29/2014 15:07	10	TAL DEN	AJS		
A:365.1	280-61614-G-2-A	280-250627	280-250337	10/30/2014 19:23	10	TAL DEN	AJS		
A:410.4	280-61614-G-2	280-249978		10/28/2014 08:27	1	TAL DEN	SWS		
A:SM 2540D	280-61614-E-2	280-249328		10/23/2014 15:11	1	TAL DEN	MW1		
A:Total Nitrogen	280-61614-A-2	280-251061		11/03/2014 12:58	1	TAL DEN	RKS		
A:Field Sampling	280-61614-A-2	280-249704		10/20/2014 16:53	1	TAL DEN	PS		

Lab ID: 280-61614-2 MS

Client ID: DBO1-E

Sample Date/Time: 10/20/2014 12:53 Received Date/Time: 10/23/2014 09:30

Method	Bottle ID	Run	Analysis		Date Prepared / Analyzed		Dil	Lab	Analyst
			Batch	Prep Batch					
A:218.6	280-61614-J-2 MS	440-214352		10/27/2014 19:18	1	TAL IRV	QPD		
P:245.1	280-61614-I-2-C MS	280-251094	280-250046	10/31/2014 14:00	1	TAL DEN	WAW		
A:245.1	280-61614-I-2-C MS	280-251094	280-250046	10/31/2014 17:37	1	TAL DEN	WAW		

Lab ID: 280-61614-2 MSD

Client ID: DBO1-E

Sample Date/Time: 10/20/2014 12:53 Received Date/Time: 10/23/2014 09:30

Method	Bottle ID	Run	Analysis		Date Prepared / Analyzed		Dil	Lab	Analyst
			Batch	Prep Batch					
A:218.6	280-61614-J-2 MSD	440-214352		10/27/2014 19:32	1	TAL IRV	QPD		
P:245.1	280-61614-I-2-D MSD	280-251094	280-250046	10/31/2014 14:00	1	TAL DEN	WAW		
A:245.1	280-61614-I-2-D MSD	280-251094	280-250046	10/31/2014 17:40	1	TAL DEN	WAW		

# Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

## Laboratory Chronicle

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	MB 280-249646/1-A	280-250496	280-249646	10/25/2014 09:58	1	TAL DEN	JRK	
A:625	MB 280-249646/1-A	280-250496	280-249646	10/30/2014 10:56	1	TAL DEN	DCK	
A:218.6	MB 440-214352/3	440-214352		10/27/2014 07:35	1	TAL IRV	QPD	
P:200.7	MB 280-249488/1-A	280-250454	280-249488	10/25/2014 07:00	1	TAL DEN	CGG	
A:200.7 Rev 4.4	MB 280-249488/1-A	280-250454	280-249488	10/29/2014 21:58	1	TAL DEN	LLB	
P:245.1	MB 280-250046/1-A	280-251094	280-250046	10/31/2014 14:00	1	TAL DEN	WAW	
A:245.1	MB 280-250046/1-A	280-251094	280-250046	10/31/2014 17:26	1	TAL DEN	WAW	
P:1664A	MB 280-250282/1-A	280-250315	280-250282	10/29/2014 10:09	1	TAL DEN	CML	
A:1664A	MB 280-250282/1-A	280-250315	280-250282	10/29/2014 13:21	1	TAL DEN	CML	
A:350.1	MB 280-250207/108	280-250207		10/28/2014 14:49	1	TAL DEN	AFH	
P:351.2	MB 280-250411/3-A	280-250673	280-250411	10/29/2014 21:34	1	TAL DEN	MW1	
A:351.2	MB 280-250411/3-A	280-250673	280-250411	10/30/2014 22:07	1	TAL DEN	MW1	
A:353.2	MB 280-250205/23	280-250205		10/28/2014 14:25	1	TAL DEN	ELJ	
P:365.2/365.3/365	MB 280-250337/5-A	280-250627	280-250337	10/29/2014 15:07	1	TAL DEN	AJS	
A:365.1	MB 280-250337/5-A	280-250627	280-250337	10/30/2014 18:52	1	TAL DEN	AJS	
A:410.4	MB 280-249978/5	280-249978		10/28/2014 08:27	1	TAL DEN	SWS	
A:SM 2540D	MB 280-249328/3	280-249328		10/23/2014 15:11	1	TAL DEN	MW1	
A:Total Nitrogen	MB 280-251061/1	280-251061		11/03/2014 12:58	1	TAL DEN	RKS	

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	LCS 280-249646/2-A	280-250496	280-249646	10/25/2014 09:58	1	TAL DEN	JRK	
A:625	LCS 280-249646/2-A	280-250496	280-249646	10/30/2014 11:26	1	TAL DEN	DCK	
A:218.6	LCS 440-214352/2	440-214352		10/27/2014 07:22	1	TAL IRV	QPD	
P:200.7	LCS 280-249488/2-A	280-250454	280-249488	10/25/2014 07:00	1	TAL DEN	CGG	
A:200.7 Rev 4.4	LCS 280-249488/2-A	280-250454	280-249488	10/29/2014 22:01	1	TAL DEN	LLB	
P:245.1	LCS 280-250046/2-A	280-251094	280-250046	10/31/2014 14:00	1	TAL DEN	WAW	
A:245.1	LCS 280-250046/2-A	280-251094	280-250046	10/31/2014 17:28	1	TAL DEN	WAW	
P:1664A	LCS 280-250282/2-A	280-250315	280-250282	10/29/2014 10:09	1	TAL DEN	CML	
A:1664A	LCS 280-250282/2-A	280-250315	280-250282	10/29/2014 13:21	1	TAL DEN	CML	
A:350.1	LCS 280-250207/106	280-250207		10/28/2014 14:45	1	TAL DEN	AFH	
P:351.2	LCS 280-250411/1-A	280-250673	280-250411	10/29/2014 21:34	1	TAL DEN	MW1	
A:351.2	LCS 280-250411/1-A	280-250673	280-250411	10/30/2014 22:04	1	TAL DEN	MW1	
A:353.2	LCS 280-250205/21	280-250205		10/28/2014 14:21	1	TAL DEN	ELJ	
P:365.2/365.3/365	LCS 280-250337/3-A	280-250627	280-250337	10/29/2014 15:07	1	TAL DEN	AJS	
A:365.1	LCS 280-250337/3-A	280-250627	280-250337	10/30/2014 18:52	1	TAL DEN	AJS	
A:410.4	LCS 280-249978/3	280-249978		10/28/2014 08:27	1	TAL DEN	SWS	
A:SM 2540D	LCS 280-249328/1	280-249328		10/23/2014 15:11	1	TAL DEN	MW1	

# Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

## Laboratory Chronicle

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	LCSD 280-249646/3-A		280-250496	280-249646	10/25/2014 09:58	1	TAL DEN	JRK
A:625	LCSD 280-249646/3-A		280-250496	280-249646	10/30/2014 11:57	1	TAL DEN	DCK
P:1664A	LCSD 280-250282/3-A		280-250315	280-250282	10/29/2014 10:09	1	TAL DEN	CML
A:1664A	LCSD 280-250282/3-A		280-250315	280-250282	10/29/2014 13:21	1	TAL DEN	CML
A:350.1	LCSD 280-250207/107		280-250207		10/28/2014 14:47	1	TAL DEN	AFH
P:351.2	LCSD 280-250411/2-A		280-250673	280-250411	10/29/2014 21:34	1	TAL DEN	MW1
A:351.2	LCSD 280-250411/2-A		280-250673	280-250411	10/30/2014 22:06	1	TAL DEN	MW1
A:353.2	LCSD 280-250205/22		280-250205		10/28/2014 14:23	1	TAL DEN	ELJ
P:365.2/365.3/36	LCSD 5 280-250337/4-A		280-250627	280-250337	10/29/2014 15:07	1	TAL DEN	AJS
A:365.1	LCSD 280-250337/4-A		280-250627	280-250337	10/30/2014 18:52	1	TAL DEN	AJS
A:410.4	LCSD 280-249978/4		280-249978		10/28/2014 08:27	1	TAL DEN	SWS
A:SM 2540D	LCSD 280-249328/2		280-249328		10/23/2014 15:11	1	TAL DEN	MW1

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:218.6	MRL 440-214352/4		440-214352		10/27/2014 07:49	1	TAL IRV	QPD
A:353.2	MRL 280-250205/18		280-250205		10/28/2014 14:06	1	TAL DEN	ELJ

Lab ID: MS

Client ID: N/A

Sample Date/Time: 10/22/2014 10:15

Received Date/Time: 10/23/2014 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:200.7	280-61610-O-1-B MS		280-250454	280-249488	10/25/2014 07:00	1	TAL DEN	CGG
A:200.7 Rev 4.4	280-61610-O-1-B MS		280-250454	280-249488	10/29/2014 22:12	1	TAL DEN	LLB
A:350.1	280-61613-D-1 MS		280-250207		10/28/2014 14:51	1	TAL DEN	AFH
P:351.2	280-61477-A-6-B MS		280-250673	280-250411	10/29/2014 21:34	1	TAL DEN	MW1
A:351.2	280-61477-A-6-B MS		280-250673	280-250411	10/30/2014 23:12	1	TAL DEN	MW1
A:353.2	280-61612-E-1 MS		280-250205		10/28/2014 14:29	1	TAL DEN	ELJ
P:365.2/365.3/36	280-61533-E-5-B MS		280-250627	280-250337	10/29/2014 15:07	1	TAL DEN	AJS
5								
A:365.1	280-61533-E-5-B MS		280-250627	280-250337	10/30/2014 18:52	1	TAL DEN	AJS
A:410.4	280-61657-B-19 MS		280-249978		10/28/2014 08:27	1	TAL DEN	SWS

# Quality Control Results

Client: Waste Management

Job Number: 280-61614-2

## Laboratory Chronicle

**Lab ID:** MSD

**Client ID:** N/A

Sample Date/Time: 10/22/2014 10:15 Received Date/Time: 10/23/2014 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:200.7	280-61610-O-1-C MSD	280-250454	280-249488	10/25/2014 07:00	1	TAL DEN	CGG	
A:200.7 Rev 4.4	280-61610-O-1-C MSD	280-250454	280-249488	10/29/2014 22:14	1	TAL DEN	LLB	
A:350.1	280-61613-D-1 MSD	280-250207		10/28/2014 14:53	1	TAL DEN	AFH	
P:351.2	280-61477-A-6-C MSD	280-250673	280-250411	10/29/2014 21:34	1	TAL DEN	MW1	
A:351.2	280-61477-A-6-C MSD	280-250673	280-250411	10/30/2014 23:13	1	TAL DEN	MW1	
A:353.2	280-61612-E-1 MSD	280-250205		10/28/2014 14:31	1	TAL DEN	ELJ	
P:365.2/365.3/36 5	280-61533-E-5-C MSD	280-250627	280-250337	10/29/2014 15:07	1	TAL DEN	AJS	
A:365.1	280-61533-E-5-C MSD	280-250627	280-250337	10/30/2014 18:52	1	TAL DEN	AJS	
A:410.4	280-61657-B-19 MSD	280-249978		10/28/2014 08:27	1	TAL DEN	SWS	

**Lab ID:** DU

**Client ID:** N/A

Sample Date/Time: 10/21/2014 13:35 Received Date/Time: 10/23/2014 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2540D	280-61625-B-1 DU	280-249328		10/23/2014 15:11	1	TAL DEN	MW1	

### Lab References:

TAL DEN = TestAmerica Denver

TAL IRV = TestAmerica Irvine

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Honolulu

4429 Malaai St. #104

Honolulu, HI 96818

Tel: 808-486-5227

TestAmerica Job ID: HXJ0064

Client Project/Site: 60147675.02

Client Project Description: AECOM, WGSL STORMWATER

For:

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Attn: Betsy Sara



Authorized for release by:

10/28/2014 6:02:53 PM

Craig O. Pilialoha, Project Manager

808-486-5227

[Craig.Pilialoha@testamericainc.com](mailto:Craig.Pilialoha@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?

Ask  
The  
Expert

Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Definitions/Glossary

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	1
D	Listed under the "D" column to designate that the result is reported on a dry weight basis	2
%R	Percent Recovery	3
CFL	Contains Free Liquid	4
CNF	Contains no Free Liquid	5
DER	Duplicate error ratio (normalized absolute difference)	6
Dil Fac	Dilution Factor	7
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	8
DLC	Decision level concentration	9
MDA	Minimum detectable activity	10
EDL	Estimated Detection Limit	11
MDC	Minimum detectable concentration	12
MDL	Method Detection Limit	13
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

## Case Narrative

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

### Job ID: HXJ0064

Laboratory: TestAmerica Honolulu

#### Narrative

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory unless otherwise stated in the report. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample(s) analyzed.

The Chain(s) of Custody are included and are an integral part of this report. This entire report was reviewed and approved for release.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(808)486-5227

#### LABORATORY REPORT

At sample receipt, the cooler/sample was 5 degrees C.

TestAmerica has determined that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

## Sample Summary

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
HXJ0064-01	DB01-E	Water - NonPotable	10/20/14 12:53	10/20/14 14:50

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## Detection Summary

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

**Client Sample ID: DB01-E**

**Lab Sample ID: HXJ0064-01**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
BOD - 5 Day	26.3		2.00		mg/L	1.00		SM5210B	Total

This Detection Summary does not include radiochemical test results.

TestAmerica Honolulu

# Client Sample Results

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

**Client Sample ID: DB01-E**  
**Date Collected: 10/20/14 12:53**  
**Date Received: 10/20/14 14:50**

**Lab Sample ID: HXJ0064-01**  
**Matrix: Water - NonPotable**

## Method: SM5210B - General Chemistry Parameters

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
BOD - 5 Day	26.3		2.00		mg/L		10/20/14 17:14	10/25/14 18:26	1.00

# QC Sample Results

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

## Method: SM5210B - General Chemistry Parameters

**Lab Sample ID: 14J0040-BLK1**

**Matrix: Water - NonPotable**

**Analysis Batch: 14J0040**

**Client Sample ID: Method Blank**

**Prep Type: Total**

**Prep Batch: 14J0040\_P**

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
BOD - 5 Day	ND		2.00		mg/L		10/20/14 16:53	10/25/14 17:58	1.00

**Lab Sample ID: 14J0040-BS1**

**Matrix: Water - NonPotable**

**Analysis Batch: 14J0040**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total**

**Prep Batch: 14J0040\_P**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits	RPD
	Added	Result	Qualifier					
BOD - 5 Day	198	177		mg/L		89	85 - 115	

**Lab Sample ID: 14J0040-DUP1**

**Matrix: Water - NonPotable**

**Analysis Batch: 14J0040**

**Client Sample ID: Duplicate**

**Prep Type: Total**

**Prep Batch: 14J0040\_P**

Analyte	Sample	Sample	Duplicate	Duplicate	Unit	D	RPD
	Result	Qualifier					
BOD - 5 Day	4.00		3.95		mg/L		1 20

TestAmerica Honolulu

# QC Association Summary

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

## WetChem

### Analysis Batch: 14J0040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
14J0040-BLK1	Method Blank	Total	Water - NonPotable	SM5210B	14J0040_P
14J0040-BS1	Lab Control Sample	Total	Water - NonPotable	SM5210B	14J0040_P
14J0040-DUP1	Duplicate	Total	Water - NonPotable	SM5210B	14J0040_P
HXJ0064-01	DB01-E	Total	Water - NonPotable	SM5210B	14J0040_P

### Prep Batch: 14J0040\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
14J0040-BLK1	Method Blank	Total	Water - NonPotable	Default Prep GenChem	14J0040_P
14J0040-BS1	Lab Control Sample	Total	Water - NonPotable	Default Prep GenChem	14J0040_P
14J0040-DUP1	Duplicate	Total	Water - NonPotable	Default Prep GenChem	14J0040_P
HXJ0064-01	DB01-E	Total	Water - NonPotable	Default Prep GenChem	14J0040_P

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## Lab Chronicle

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

**Client Sample ID: DB01-E**

**Date Collected: 10/20/14 12:53**

**Date Received: 10/20/14 14:50**

**Lab Sample ID: HXJ0064-01**

**Matrix: Water - NonPotable**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep GenChem		1.00	14J0040_P	10/20/14 17:14	ENM	TAL HON
Total	Analysis	SM5210B		1.00	14J0040	10/25/14 18:26	ENM	TAL HON

**Laboratory References:**

TAL HON = TestAmerica Honolulu, 4429 Malaai St. #104, Honolulu, HI 96818, TEL 808-486-5227

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## Certification Summary

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

### Laboratory: TestAmerica Honolulu

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
USDA	Federal		HON-S-206	01-31-15

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## Method Summary

Client: TestAmerica Denver  
Project/Site: 60147675.02

TestAmerica Job ID: HXJ0064

Method	Method Description	Protocol	Laboratory
SM5210B	General Chemistry Parameters		TAL HON

### Protocol References:

Laboratory References:  
TAL HON = TestAmerica Honolulu, 4429 Malaai St. #104, Honolulu, HI 96818, TEL 808-486-5227

## Chain of Custody Record

Sampler ID \_\_\_\_\_

Temperature on Receipt \_\_\_\_\_

Drinking Water? Yes  No

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client

Wise Management / AEOM

Address

1001 Bishop St. Suite 1600

City

Honolulu

State

H1

Zip Code

96813

Project Name and Location (State)

WHL Start Mtn/Her

Contract/Purchase Order/Quote No.

60287037-02

(Containers for each sample may be combined on one line)

Sample I.D. No. and Description

DB01-E

Date

1/21/2014

Time

1253

Air

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

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Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4

NaOH

ZnAc1

NaOH

HCl

Water

Soil

Seal

Aquaculture

Uptakes

HC1

HNO3

H2SO4



# **HEXAVALENT CHROMIUM pH CHECK (EPA 7199/218.6)**

Date: 10/20/14

Analyst: EAN

NH4 Buffer: 4 drops

0.02N H<sub>2</sub>SO<sub>4</sub>: N/A

Conc. H<sub>2</sub>SO<sub>4</sub>: 11A

Meter ID: 02N1

#### pH 4 Buffer:

pH 7 Buffer: 7.05 (ICV)

### pH 10 Buffer:

pH Criteria : 9.0 - 9.5







## Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-61614-2

**Login Number: 61614**

**List Source: TestAmerica Denver**

**List Number: 1**

**Creator: Orfield, Tayler C**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Refer to job narrative for details
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Refer to job narrative for details
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	REFER TO CUR
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-61614-2

**Login Number: 61614**

**List Source: TestAmerica Irvine**

**List Number: 2**

**List Creation: 10/25/14 11:11 AM**

**Creator: Salas, Margarita**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	